KAKURIN, N. Ya.

So: JPRS 53649
21 July 71

CONCERNING A PROMISING TREND IN COMPUTER TECHNOLOGY

[Article by V.P. Fofanovskiy, Yu. A. Voglenko and N. Ya. Kakurin, Khar'kov, Problemy bioniki, Respublikanskiy Mezhvedomstvennyy Nauchno-Tekhnicheskiy sbornik, Russian, No 2, 1970, pp 82-87]

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One such index is the reliability of operation. The provision of the necessary level of reliability along with increased complexity requires a reduction in intensity of failures in the individual elements of a system by two orders of magnitude, which in technologically unacceptable and economically disadvantageous. This necessitates therefore arises for the development of new principles and methods for the construction of systems preserving the necessary reliability at relatively low reliability of the system's individual elements. The existence in the values of their parameters, or even the breakdown of a certain number of elements.

Modern computer systems lose their ability to function [illegible] almost any malfunction. An appreciable increase in the complexity of systems can lead to the situation that malfunctions will become more likely, while excessive miniaturization will only make repair more difficult or will make it generally impossible. To both shortcomings, the costs related to the correction of malfunctions must be added. Naturally, the planner is interested in the question as to whether the costs related to the malfunctions will make a planned system inadvisable.

- 24 -

USSR UDC 681.327

KAKURIN, N. Ya., and VASILENKO, Yu. A.

"Methods of Constructing Multistable Elements"

Pribory i sistemy avtomatiki. Resp. mezhved. nauch.-tekhn. sb. (Automation Instruments and Systems. Republic Interdepartmental Scientific and Technical Collection), 1970, vyp. 14, pp 48-51 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 6, Jun 71, Abstract No 6 B187)

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1/1

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USSR UDC 547.26'118

PUDOVIK, A. N., KONOVALOVA, I. V., KAKURINA, V. P., and BURNAYEVA, L. A., Kazan' State University Imeni V. I. Ul'yanov-Lenin

"Reactions of Monoisocyanates of Alkyleneglycolphosphorous Acids With the Esters of α-Ketocarboxylic Acids and Phenylglyoxal"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 3, Mar 73, pp 553-556

Abstract: Isocyanates of ethylene- and 1,3-butyleneglycolphosphorous acids form 1:1 addition products with esters of pyroracemic, benzoylformic, α,β-diketobutyric acids and phenylglyoxal. On the basis of spectral data and sharp melting points bicyclic structures were assigned to these compounds. The reactions were carried out at -5 to 0° in methylene chloride, adding the carbonyl compounds dropwise to the isocyanate; the products crystallized on overnight standing. Esters of pyroracemic and benzoylformic acids form crystalline products with ethyleneglyoxalphosphorous acids, phenylglyoxal yields a dense liquid and the ester of α,β-diketobutyric acid -- a glassy material.

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Leningrad, Zhurnal Obshchey Khimii, Vol 43(105), No 2, Feb 73, pp 256-260

Abstract: Monoisocyanates of dialkylphosphorous acids react with esters of pyruvic, benzoylformic, and α, β-diketobutyric acids and phenylglyoxal in methylene chloride at -5° to 0° yielding 2-alkoxy-2-oxo-3-alkyl-5-substituted 2-phosphaoxazolidin-4-ones, dense liquids soluble in organic solvents, insoluble in water, and isocyanates of dialkylphosphoric acids in 15% yield. The reaction mechanism was studied by IR and NMR spectroscopic methods.

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USSR UDC 547.26'118

PUDOVIK, A. N., KONOVALOVA, I. V., and KAKURINA, V. P., Kazan' State University imeni V. I. Ul'yanov-Lenin

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Leningrad, Zhurnal Obshchey Khimii, Vol 42(103), No 2, Feb 72, pp 333-337

Abstract: The authors investigate reactions of ethyl benzoylformate with anilido- and p-toluidinodiethylphosphites. It is shown that these reactions result in formation of 0,0'-diethyl-0"-α-carboethoxybenzyl-N-phenylimidophosphates. It is found that 0,0'-diethyl 0"-α-carboethoxyethyl N-phenylimidophosphate reacts with the second molecule of the pyruvic ester to form diethyl α-carboethoxyethyl phosphate. Reactions of diphenyl anilidophosphinite with pyruvic, benzoylformic and mesoxalic acid esters take place with the formation of diphenylanilidophosphine.

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Abstract: In furthering research on reactions of trivalent phosphoric acid derivatives with carbonyl compounds activated by electron acceptor substituents, a study was made of the reaction of diethylphosphorus acid monoisocyanate with ethyl pyruvate. The reaction product is 2-ethoxy-2-oxo-2-ethyl-5-methyl-5-carboethoxy-2-phosphaoxazolin-4-one. The new compound is a very viscous liquid which can be distilled under vacuum without being decomposed and can be dissolved in organic solvents. On prolonged storage, the product gradually thickens and turns into a glassy insoluble mass. The initial reaction yields optimum results at low temperatures and a 1:1 ratio of reagents in methylene chloride solution.

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USSR

UDC: 54[illegible]

PUDOVIK, A. N., GUR'YANOVA, I. V., KANURINA, V. P., GOL'DFARB, E. N., Kazan' State Institute imeni V. I. Ul'yanov-Lenin

"On the Reaction of Dialkylchlorophosphites With Pyrocatechin Acid Esters"

Leningrad, Zhurnal Obshchey Khimii, Vol 40 (1902), No 11, Nov 70, pp 2376-2376

Abstract: The authors study reactions of methyl and ethyl pyrocatechin with diethyl- and dibutylchlorophosphates. Various proportions of the reagents were reacted at temperatures ranging from 0 to 100°C. The reaction is most complete when the reagents are taken in an equimolecular ratio and reacted with moderate heating or allowed to stand at room temperature for a considerable length of time. Colorless viscous liquids are formed with quantitative release of alkyl chlorides. Elementary analysis and the molecular weight of the resultant products indicate that two [illegible] participate in the synthesis. Two molecules of alkyl chloride are given off during the reaction. On the basis of these considerations, it is concluded that the reaction [illegible] cyclic phosphonates -- 2,6-dimethyl- and 2,6-dibutalkoxy-1,4-dialkoxy-2,5-dioxa-1,4-diphosphoranes. Formation of intermediate products was investigated by studying the P^{31} NMR spectra.

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USSR

VASILENKO, Yu. A., KAKURIN, N. Ya.

"One Canonical Form of Representation of the Functions of k-Valued Logic"

Mnogoyustoych. Elementy i ikh Primeneniye [Multistable Elements and Their Applications -- Collection of Works], Moscow, Sov. Radio Press, 1971, pp 102-105, (Translated From Referativnyy Zhurnal, Kibernetika, No 3, 1972, Abstract No 3 V348 by G. Gavrilov).

Translation: The author's have introduced so-called (i, j)-continuous functions of k-valued logic. Function $f(x_1, \ldots, x_n)$ from P_k is called (i, j)-continuous if for any two sets $\tilde{\alpha}$ and $\tilde{\beta}$ of values of variables satisfying the condition $|\alpha_m - \beta_m| \leq i$, $m = 1, \ldots, n$, the following relationship is fulfilled: $|f(\tilde{\alpha}) - f(\tilde{\beta})| \leq j$. It is proven that where $i \geq j$, the class of all (i, j)-continuous functions is closed, while where $0 < i < j < k - 1$ it is not closed (to the operation of superposition). Then, a form of the representation of (i, j)-continuous functions is presented. It is a natural extension to the case of (i, j)-continuous functions of the widely known representation of functions from P_k in system $0, 1, \ldots, k - 1, j_0(x), \ldots, j_{k-1}(x)$, $\min(x, y)$, $\max(x, y)$ (RZhMat, 1959, 9704). A system is presented

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VASILENKO, Yu. A., KAKURIN, N. Ya., Mnogoyustoych. Elementy i ikh Primeneniye, Moscow, Sov. Radio Press, 1971, pp 102-105.

consisting of four functions which is complete in the class of (i, j)-continuous functions.

Abstractors Note. It is easy to see that the classes of (i, j)-continuous functions are simple generalizations of the classes U_{E_1}, E_2, ..., E_S, studied by S. V. Yablonskiy in the work indicated above. Only instead of some divisions of set E^k, the covering of the set with various (special) systems of subsets must be taken.

2/2

USSR

UDC 681.325.65:537.312.62

KAN, Ya. S., BELYAVSKIY, V. L., VASILENKO, Yu. A., and KAKURIN, N. Ya., Khar'kov Institute of Radioelectronics

"A Multiple-Valued Logic Element"

USSR Author's Certificate No 262954, Filed 25 Jun 68, Published 4 Jun 70 (from Referativnyy Zhurnal -- Avtomatika, Telemekhanika, i Vychislitel'naya Tekhnika, No 8, 1971, Abstract No 8B144 P)

Translation: Multiple-valued logic elements (MLE) whose circuitry is based on amplitude, phase, and frequency representation of data are well-known. A common shortcoming of their circuits is that they are monofunctional and not sufficiently reliable in operation, especially when there is a large number of input variables. In order to guarantee reliable operation on the part of an MLE that can perform a sufficiently large number of multiple-valued logic functions, it is suggested that the MLE be constructed in such a way that information can be coded spatially. This can be accomplished by using cryotrons as components of the MLE, since they make it possible to use a purely geometric principle of information conversion. In the proposed logic element, the cores of the cryotrons in each line are connected in series. The beginnings of the cores of the odd cryotrons in an odd and

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KAN, Ya. S., et al., USSR Author's Certificate No 262954, Filed 25 Jun 68, Published 4 Jun 70 (from Referativnyy Zhurnal — Avtomatika, Telemekhanika, i Vychislitel'naya Tekhnika, No 8, 1971, Abstract No 8B144 P)

even line are interconnected. The ends of the cores are also interconnected. The windings of the odd cryotrons in the odd lines and the windings of the even cryotrons in the even lines are connected in series and joined to the unit outputs of the inverters. The unit inputs of the inverters are connected with the sources of the input variables x_i. The windings of the even cryotrons in the odd lines and the windings of the odd cryotrons in the even lines are connected in series and joined to the zero inputs of the inverters. 1 illustration.

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UNCLASSIFIED PROCESSING DATE--23OCT70

1/2 019

TITLE--CALCULATION OF PLATES OF ARBITRARY PLANFORM ARBITRARILY CLAMPED AT THE EDGES AND SUPPORTED SPANWISE BY ELASTIC BEAMS -U-

AUTHOR-(02)-KAKUSHADZE, A.M., KOBAKHIDZE, SH.S.

COUNTRY OF INFO--USSR

SOURCE--AKADEMIIA NAUK GRUZINSKOI SSR, SOOBSHCHENIIA, VOL. 57, JAN. 1970, P. 109-112

DATE PUBLISHED--------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--BOX BEAM, ELASTICITY, FLAT PLATE, THIN PLATE STRUCTURE, GREEN FUNCTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1689 STEP NO--UR/0251/70/057/000/0109/0112

CIRC ACCESSION NO--AP0118667

UNCLASSIFIED

2/2 019 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0118667

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DISCUSSION OF PROBLEMS OF PLATES OF ARBITRARY PLANFORM AND ARBITRARY END CONDITIONS AND FOR PLATES SUPPORTED AT THE EDGES BY ELASTIC BEAMS. A BASIC SYSTEM OF EQUATIONS FOR PROBLEMS OF THIS TYPE IS DERIVED, AND AN INFLUENCE GREEN'S FUNCTION FOR THIS SYSTEM IS OBTAINED. SOLUTIONS TO THESE PROBLEMS ARE OBTAINED BY THE METHOD OF INITIAL PARAMETERS.

UNCLASSIFIED

UDC:621.039.542.33

USSR

KAKUSHADZE, L. YE. and KOTEL'NIKOV, R. B.

"Study of the Bending Strength of Dispersion Materials of Uranium Dioxide and Molybdenum in the 293-1870 K Temperature Interval"

Moscow, Atomnaya Energiya, Vol 36, No 1, Jan 74, pp 19-23

Abstract: The efficiency of the cores of dispersion fuel elements depends to a great extent on their mechanical strength. The strength of ceramic materials is usually defined by bending or compressive strength testing. Ceramets of molybdenum-coated uranium dioxide particles 200-315 μ in diameter and a mixture of such particles with molybdenum powder (5-20 vol.% molybdenum) were tested. The specimens for testing were cut by a diamond disc from hot-pressed cylindrical blanks. The specimens were rectangles measuring 3×3×15 mm. The density of the specimens was 96 ± 1.2% of their theoretical density. The specimens were loaded by a three-point plan at 2.5 kg/mm^2·min. The distance between supports was 10.3 mm. The specimens were heated by radiation with a strip heater carrying alternating current. The temperature of the specimens was measured by an optical pyrometer. High-purity helium surrounded the specimens during the tests. Inspection of the ruptured specimens showed no significant bending even after testing at 1870 K. Regardless of the type of ceramet, composition and temperature of the test, the break occurred through the uranium dioxide particles with no

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KAKUSHADZE, L. YE. and KOTEL'NIKOV, R. B., Moscow, Atomnaya Energiya, Vol 36, No 1, Jan 74, pp 19-23

preferential rupture through the molybdenum layers or extraction of uranium dioxide particles from the molybdenum matrix.

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UDC: 591.104

USSR

BARSEGYAN, L. Kh., KAKUSHKINA, N. V., and PIRUZYAN, L. A.

"Change in Reaction of Oxyhemoglobin Transhemization in Mice After Exposure to a Constant Magnetic Field"

Moscow, Izvestiya Akademii nauk SSSR--Seriya biologicheskaya, No 5, 1972, pp 785-787

Abstract: This brief communication offers the results of a study of the action of a constant magnetic field of 5000 oersteds on the reaction of the transhemization of oxyhemoglobin (HbO_2) in mice after 24 hours. The reactions and the processing of the experimental data were performed by the known method of Blyumenfel'd and Charnyy, in 1950, and Blyumenfel'd in 1957. The experimental E_a of this reaction is the same as the E_a in the reduction reaction of HbO_2, which makes investigation of the transhemization reaction convenient for estimating the functional state of the hemoglobin. The authors find that the value of E_a they obtained for mice is the same as the value of E_a for the HbO_2 in dogs and the E_a of the reduction reaction of the oxyhemoglobin complex. They found also that the action of the magnetic field causes an

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UDC: 591.104

USSR

BARSEGYAN, L. Kh., et al, Izvestiya Akademii nauk SSSR--Seriya biologicheskaya, No 5, 1972, pp 785-787

increase in E_a. Finally, they found an agreement between their results and those of Piruzyan, et al. (1971) who showed that the charge in the number of regular elements and the concentration of free radicals in the mice's blood is maintained for one or two weeks after exposure to the magnetic field, and then returns to normal in three weeks.

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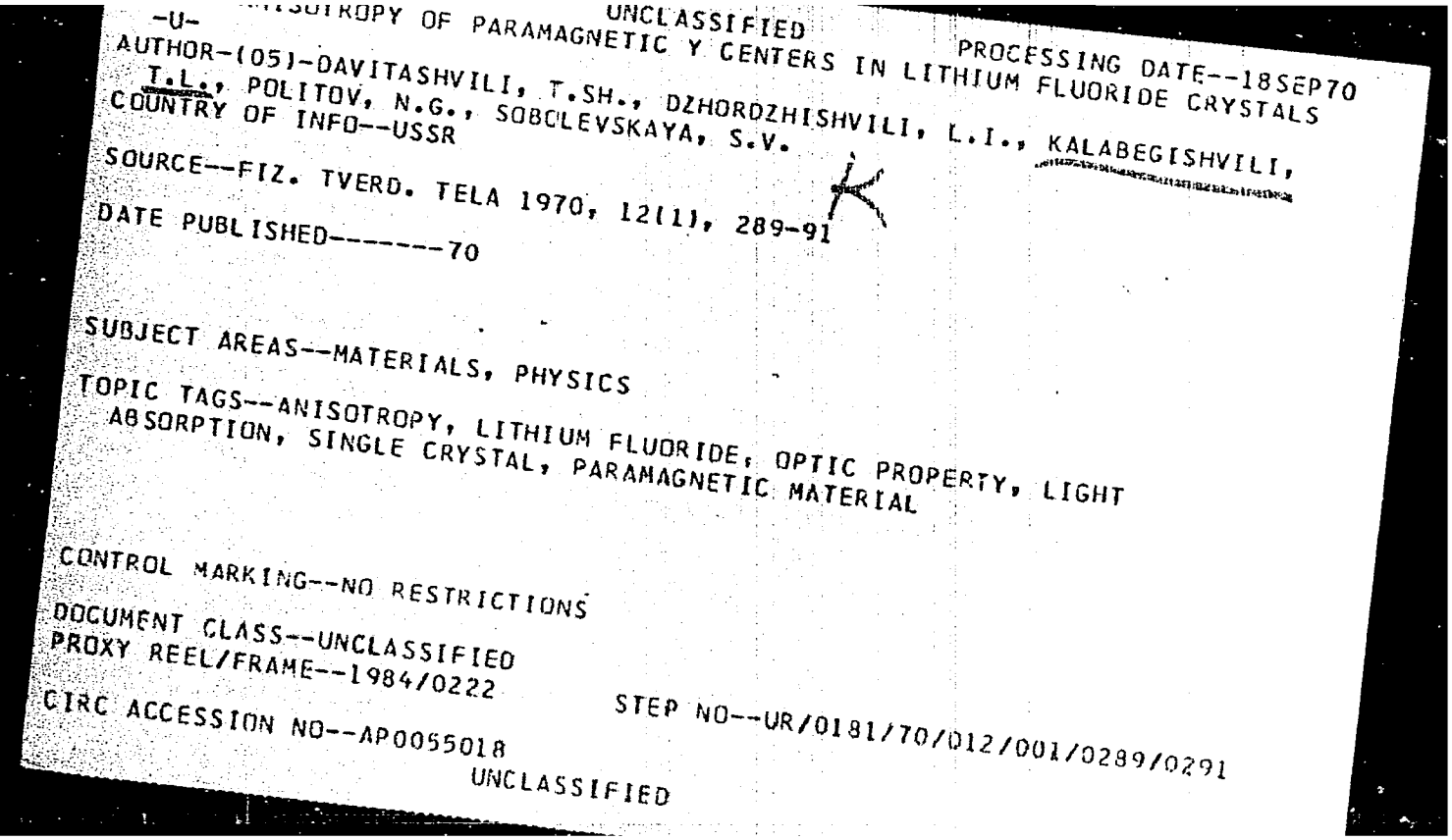

-U- UNCLASSIFIED PROCESSING DATE--18SEP70

...ISOTROPY OF PARAMAGNETIC Y CENTERS IN LITHIUM FLUORIDE CRYSTALS

AUTHOR-(05)-DAVITASHVILI, T.SH., DZHORDZHISHVILI, L.I., KALABEGISHVILI, T.L., POLITOV, N.G., SOBOLEVSKAYA, S.V.

COUNTRY OF INFO--USSR

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SUBJECT AREAS--MATERIALS, PHYSICS

TOPIC TAGS--ANISOTROPY, LITHIUM FLUORIDE, OPTIC PROPERTY, LIGHT ABSORPTION, SINGLE CRYSTAL, PARAMAGNETIC MATERIAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1984/0222

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2/2 027 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0055018

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EPR SPECTRA WERE INVESTIGATED OF SINGLE CRYSTALS OF LIF AFTER IRRADN. WITH A PRIME60 CO SOURCE IN A REACTOR WITH EMPHASIS ON THE Y LINE, APPEARING AFTER NONISOTHERMAL ANNEALING OF IRRADIATED CRYSTALS. OPTICAL ABSORPTION SPECTRA WERE ALSO RECORDED BEFORE AND AFTER ANNEALING. IN GAMMA IRRADIATED NONANNEALED CRYSTALS F AND M ABSORPTION BANDS WERE OBSD. AFTER NONISOTHERMAL ANNEALING OF THESE CRYSTALS, A WEAK F BAND REMAINED IN THE OPTICAL ABSORPTION SPECTRUM AND ONLY A Y LINE IN THE EPR SPECTRUM. DEPENDENCES WERE MEASURED OF THE WIDTH DELTA H AND G FACTOR ON ORIENTATION OF THE CRYSTAL IN AN EXTERNAL CONST. MAGNETIC FIELD H. WHEN H PARALLEL TO (010) ALL OF THE AXES (111) FORM AN ANGLE OF 54.7DEGREES WITH H, CENTERS OF GRAVITY OF ALL 4 LINES COINCIDE AND DISPLACEMENTS RELATIVE TO THE LINES ARE ABSENT. WHEN H PARALLEL TO (110), 1 PAIR OF THE 4 AXES (111) FORMS WITH H AN ANGLE OF 35.3DEGREES, AND 2ND PAIR AN ANGLE OF 90DEGREES. THE CENTERS OF GRAVITY COINCIDE FOR THE SEP . LINES IN EACH PAIR. WHEN H PARALLEL TO (111), THE REMAINING 3 AXES (111) FORM WITH H AN ANGLE OF 72DEGREES. THE LINES ARE SEPD. INTO 2 GROUPS CONSISTING OF 1 AND 3 LINES, RESP. THE WIDTH AND G FACTOR ARE DETD. BY THE DISPLACEMENTS BETWEEN THE GROUPS OF LINES. IT FOLLOWS THAT Y CENTERS POSSES AN AXIS OF AXIAL SYMMETRY ALONG (111).

UNCLASSIFIED

UDC 681.142:621.391.15

USSR

KALABEKOV, B.A., LETNIK, L.A.

"Effectiveness Of Methods Of Digital Compression And Expansion"

Elektrosvyaz', No 3, Mar 1972, pp 73-78

Abstract: Some principles of construction are considered of nonlinear digital converters intended for use as compressing and expanding devices. Two methods of digital compression are discussed: with and without a selection of digits for recording of the sign of the quantization increment. A calculation is made of the parameters of the converters. An evaluation is presented of the advantages obtained by use of these methods with unequal quantization increments. 5 fig. 6 ref. Received, 10 Nov 70.

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Translation

signal regeneration in an optical system. The time position of the
minimum variance of the error in determining the time position of
Methods of signal analysis at regeneration points are discussed. The prob-
ability of disruption of the operation of the system due to inaccuracy in
synchronizing the pedestal frequency is determined. V. Sh.

UDC: 621.396.946:621.391

USSR

KALABEKOV, B. A., KLEYNERMAN, R. I.

"On the Problem of Selecting the Optimum Length of a Regeneration Segment"

Tr. Mosk. elektrotekhn. in-ta svyazi (Works of the Moscow Electrical Engineering Institute of Communications), 1970, vyp., pp 42-46 (from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11A194)

The authors determine the optimum length of the segment for [illegible] modulation which ensures

2/2 019 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0118667

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DISCUSSION OF PROBLEMS OF PLATES OF ARBITRARY PLANFORM AND ARBITRARY END CONDITIONS AND FOR PLATES SUPPORTED AT THE EDGES BY ELASTIC BEAMS. A BASIC SYSTEM OF EQUATIONS [illegible] FOR THIS SYSTEM IS OBTAINED. SOLUTIONS TO THESE PROBL[illegible] ARE OBTAINED BY [illegible] METHOD OF INITIAL [illegible]

UNCLASSIFIED

USSR

UDC:621.039.542.33

KAKUSHADZE, L. YE. and KOTEL'NIKOV, R. B.

"Study of the Bending Strength of Dispersion Materials of Uranium Dioxide and Molybdenum in the 293-1870 K Temperature Interval"

Moscow, Atomnaya Energiya, Vol 36, No 1, Jan 74, pp 19-23

Abstract: The efficiency of the cores of dispersion fuel elements depends to a great extent on their mechanical strength. The strength of ceramic materials is usually defined by bending or compressive strength testing. Ceramets of molybdenum-coated uranium dioxide particles 200-315 μ in diameter and a mixture of such particles with molybdenum powder (5-20 vol.% molybdenum) were tested. The specimens for testing were cut by a diamond disc from hot-pressed cylindrical blanks. The specimens were rectangles measuring 3×3×15 mm. The density of the specimens was 96 ± 1.2% of their theoretical density. The specimens were loaded by a three-point plan at 2.5 kg/mm^2·min. The distance between supports was 10.3 mm. The specimens were heated by radiation with a strip heater carrying alternating current. The temperature of the specimens was measured by an optical pyrometer. High-purity helium surrounded the specimens during the tests. Inspection of the ruptured specimens showed no significant bending even after testing at 1870 K. Regardless of the type of ceramet, composition and temperature of the test, the break occurred through the uranium dioxide particles with no

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USSR

KAKUSHADZE, L. YE. and KOTEL'NIKOV, R. B., Moscow, Atomnaya Energiya, Vol 36, No 1, Jan 74, pp 19-23

preferential rupture through the molybdenum layers or extraction of uranium dioxide particles from the molybdenum matrix.

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USSR

UDC: 591.104

BARSEGYAN, L. Kh., KAKUSHKINA, N. V., and PIRUZYAN, L. A.

"Change in Reaction of Oxyhemoglobin Transhemization in Mice After Exposure to a Constant Magnetic Field"

Moscow, Izvestiya Akademii nauk SSSR--Seriya biologicheskaya, No 5, 1972, pp 785-787

Abstract: This brief communication offers the results of a study of the action of a constant magnetic field of 5000 oersteds on the reaction of the transhemization of oxyhemoglobin (HbO_2) in mice after 24 hours. The reactions and the processing of the experimental data were performed by the known method of Blyumenfel'd and Charnyy, in 1950, and Blyumenfel'd in 1957. The experimental E_a of this reaction is the same as the E_a in the reduction reaction of HbO_2, which makes investigation of the transhemization reaction convenient for estimating the functional state of the hemoglobin. The authors find that the value of E_a they obtained for mice is the same as the value of E_a for the HbO_2 in dogs and the E_a of the reduction reaction of the oxyhemoglobin complex. They found also that the action of the magnetic field causes an

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USSR

UDC: 591.104

BARSEGYAN, L. Kh., et al, Izvestiya Akademii nauk SSSR--Seriya biologicheskaya, No 5, 1972, pp 785-787

increase in E_a. Finally, they found an agreement between their results and those of Piruzyan, et al (1971) who showed that the change in the number of regular elements and the concentration of free radicals in the mice's blood is maintained for one or two weeks after exposure to the magnetic field, and then returns to normal in three weeks.

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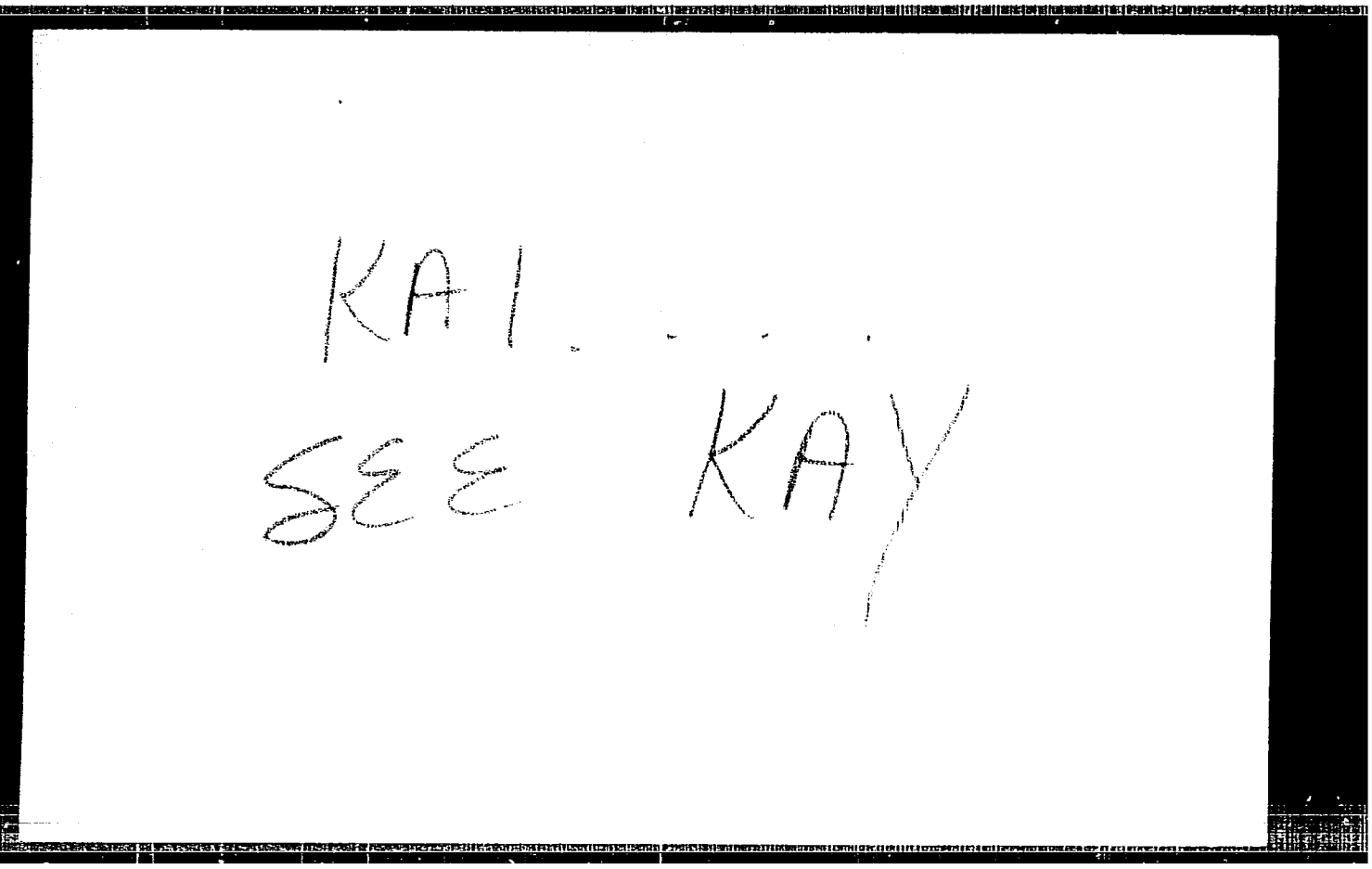

1/2 027 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--ANISOTROPY OF PARAMAGNETIC Y CENTERS IN LITHIUM FLUORIDE CRYSTALS -U-

AUTHOR-(05)-DAVITASHVILI, T.SH., DZHORDZHESHVILI, L.I., KALABEGISHVILI, T.L., POLITOV, N.G., SOBOLEVSKAYA, S.V.

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CIRC ACCESSION NO--AP0055018

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--18SEP70

2/2 027

CIRC ACCESSION NO--AP0055018

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EPR SPECTRA WERE INVESTIGATED OF SINGLE CRYSTALS OF LIF AFTER IRRADN. WITH A PRIME60 CO SOURCE IN A REACTOR WITH EMPHASIS ON THE Y LINE, APPEARING AFTER NONISOTHERMAL ANNEALING OF IRRADIATED CRYSTALS. OPTICAL ABSORPTION SPECTRA WERE ALSO RECORDED BEFORE AND AFTER ANNEALING. IN GAMMA IRRADIATED NONANNEALED CRYSTALS F AND M ABSORPTION BANDS WERE OBSD. AFTER NONISOTHERMAL ANNEALING OF THESE CRYSTALS, A WEAK F BAND REMAINED IN THE OPTICAL ABSORPTION SPECTRUM AND ONLY A Y LINE IN THE EPR SPECTRUM. DEPENDENCES WERE MEASURED OF THE WIDTH DELTA H AND G FACTOR ON ORIENTATION OF THE CRYSTAL IN AN EXTERNAL CONST. MAGNETIC FIELD H. WHEN H PARALLEL TO (010) ALL OF THE AXES (111) FORM AN ANGLE OF 54.7DEGREES WITH H, CENTERS OF GRAVITY OF ALL 4 LINES COINCIDE AND DISPLACEMENTS RELATIVE TO THE LINES ARE ABSENT. WHEN H PARALLEL TO (110), 1 PAIR OF THE 4 AXES (111) FORMS WITH H AN ANGLE OF 35.3DEGREES, AND 2ND PAIR AN ANGLE OF 90DEGREES. THE CENTERS OF GRAVITY COINCIDE FOR THE SEP . LINES IN EACH PAIR. WHEN H PARALLEL TO (111), THE REMAINING 3 AXES (111) FORM WITH H AN ANGLE OF 72DEGREES. THE LINES ARE SEPD. INTO 2 GROUPS CONSISTING OF 1 AND 3 LINES, RESP. THE WIDTH AND G FACTOR ARE DETD. BY THE DISPLACEMENTS BETWEEN THE GROUPS OF LINES. IT FOLLOWS THAT Y CENTERS POSSES AN AXIS OF AXIAL SYMMETRY ALONG (111).

UNCLASSIFIED

UDC 681.142:621.391.15

USSR

KALABEKOV, B.A., LETNIK, L.A.

"Effectiveness Of Methods Of Digital Compression And Expansion"

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USSR

UDC: 621.396.946:621.391

KALABEKOV, B. A., KLEYNERMAN, R. I.

"On the Problem of Selecting the Optimum Length of a Regeneration Segment"

Tr. Mosk. elektrotekhn. in-ta svyazi (Works of the Moscow Electrical Engineering Institute of Communications), 1970, vyp., pp 42-45 (from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11A194)

Translation: The authors determine the optimum length of the segment for signal regeneration in an optical system with IR modulation which ensures minimum variance of the error in determining the time position of a pulse. Methods of signal analysis at regeneration points are discussed. The probability of disruption of the operation of the system due to inaccuracy in synchronizing the pedestal frequency is determined. V. Sh.

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USSR UDC 547.26'118+546.287

TROFIMOV, B. A., GAVRILOVA, G. M., KALABIN, G. A., and VORONKOV, M. G., Irkutsk Institute of Organic Chemistry, Siberian Branch of the Academy of Sciences USSR

"Bis(trimethylsilyl)phosphonemethyldioxacyclanes, Cyclic Addition Products of Bis(trimethylsilyl) Phosphite and Divinyl Ethers of 1,1- and 1,2-Alkanediols"

Leningrad, Zhurnal Obshchey Khimii, Vol 43, No 11, Nov 73, pp 2420-2425

Abstract: Homolytic addition of bis(trimethylsilyl) phosphite to divinyl ethers of 1,1-diols led to the formation of 4-methyl-5-/bis(trimethylsilyl) phosphonomethyl/-1,3-dioxolanes. The reaction proceeded stereospecifically with the formation of cis-isomers to the extent of 92%. The reaction of bis (trimethylsilyl) phosphite with the divinyl ether of ethyleneglycol resulted in the formation of 2-methyl-3-/bis(trimethylsilyl)phosphonomethyl/-1,4-dioxan.

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USSR

UDC 547.341:538.27

KALABIN, G. A., ATAVIN, A. S., GAVRILOVA, G. M., TROFIMOV, B. A., and Corresponding Member of the Academy of Sciences USSR SHOSTAKOVSKIY, M. F., Irkutsk Institute of Organic Chemistry, Irkutsk, East Siberian Affiliate, Siberian Department, Academy of Sciences USSR

"Structure of the Products Resulting From the Addition of Dialkylphosphites to Divinyl Ethers of Gem-diols"

Moscow, Doklady Akademii Nauk SSSR, Vol 190, No 4, Feb 70, pp 849-852

Abstract: On the basis of PMR data the authors conclude that the addition of dialkylphosphites to 1,1-divinylhydroxyalkanes occurs stereospecifically yielding 1,3-dioxolanes with cis-oriented substituents at C_4 and C_5. The PMR spectra indicate absence of free rotation around the P-C and C-C bonds in the $(RO)_2-P(:O)-CH_2C-$ fragment; furthermore, the cycle is not planar. An assumption is made that one of the carbon atoms of the cycle (C_4 or C_5) sticks out of the plane of the ring by an angle of more than 30°.

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REEL # 11

GUSEV, V.V. to

KALABIN, G.A.